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ABSTRACT

METHOD FOR MACHINING A MATERIAL WITH HIGH-POWER DENSITY ELECTROMAGNETIC RADIATION

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The invention relates to a method for machining a material with high-power density electromagnetic radiation. The radiation has its wavelength selected material-specifically, such that the radiation penetrates inside the material without substantial surface absorption. The radiation is focused on a spot inside the material and/or in the proximity of a penetration surface and this spot is moved along a desired machining path. The electromagnetic radiation can be provided by laser light and the focusing can be effected by means of optics. The method is particularly useful in cutting glass and the method offers benefits, including only slight heating of the machined workpiece, smoothness of the fracture plane and no vaporization of harmful alloying elements.

Most Illustrative: Figure 1